MANGEL, Janos; SZONYI, Laszlo

Reconstruction of the Szekesfehervar and Budapest-Ferenc-varos yards. Vasut 13 no.1:20 30 Ja '63.

SZONYI, Laszlo, dr., a mezogazdasagi tudomanyok (erdeszet) kandidatusa

Water economy in the forests of the German Democratic Reublic. Erdo 13 no. 2: 72-78 F '64.

1. Erdeszeti Tudomanyos Intezet tudomanyos osztalyvezetoje, Budapest.

SZONYI, Laszlo, dr.; KNOTIK, Matild, dr.

Significance of slmonellosis in intestinal diseases in children. Gyermekgyogyaszat 15 no.2:45-48 F'64.

1. Komarom Jarasi Tanacs I.sz.Korhaza, Szony, Fertoso Osztaly.

*

LOMBOS, Oszkar, dr.,; RADEK, Mar, dr.,; SZONYI, Laszlo, dr.

Cellular changes in the bone marrow and in the peripheral blood in tuberculosis in children following prolonged application of massive doses of isoniazed. Orv. hetil. 96 no.7: 176-182 13 Feb 55.

1. A Pecsi Orvostudomanyi Egyetem Gyermekklinikajanak (igazgato: Kerpel-Fronius Odon dr. egyet. tanar) kozlemenye.

(BLOOD
picture, eff. of isoniazid in tuberc. in child)
(NICOTINIC ACID ISOMERS, effects,
isoniazid on blood picture in tuberc. in child)
(TUBERCULOSIS, in infant and child,
ther., isoniazid, eff. on blood picture)

SZONYI, Laszlo, dr.,; LOMBOS, Oszkar dr.,; RADEK, Maria, dr.

Value of chemical investigation of cerebrospinal fluid in early diagnosis of non-purulent meningitis. Orv. hetil. 96 no.50: 1384-1387 11 Dec 55.

1. A Pecsi Orvostudomanyi Egyetem Gyermekklinikajanak(igazgato: Kerpel-Fronius Odon dr. egyet. tanar) kozlemenye.

(MENINGITIS, cerebrospinal fluid in protein, sodium chloride & sugar determ., early diag. value in non-purulent meningitis (Hun))

(CEREBROSPINAL FLUID, in various dis. meningitis, non-purulent, protein, sodium chloride & sugar determ., early diag. value (Hun))

SZONYI, L

Changes in the composition of bone-marrow cells of tuberculous children and the behavior of the peripheral blood after prolonged treatment with isonicotinoyl hydrazide, in large doses. O. Lombos, M. L. Radek, and L. Szonyi (Univ. Pécs, Hung.). *Monatsschr. Kinderheilk.* 103, 508-14(1955). —The treated patients showed a lymphocytosis of the bone marrow, which is considered to be a sign of favorable response.
A. E. Meyer

(2)

LOMBOS, Oszkar, dr.; SZONYI, Laszlo, Dr.; RADEK, Maria, L-ne, Dr.

Diagnostic value of the appearance of large quantities of polynuclear cells in the cerebrospinal fluid in non-suppurative meningitis of children. Gyermekgyogyaszat 8 no.9-10:294-299 Sept-Oct 57.

1. Pecsi Orvostudomanyi Egyetem Gyermekklinikajanak Kozlemenye (Igazgato: dr. Kerpel-Fronius Odon egyetemi tanar).

(MENINGITIS, in inf. & child
non-suppurative, diag. value of appearance of large quantities of polynuclear cells in CSF (Hun))
(CEREBROSPINAL FLUID, in various dis.
meningitis in child., non-suppurative, diag. value of appearance of large quantities of polynuclear cells (Hun))

LOMBOS, Oszkar, Dr.; SZONYI, Lesglo, Dr.

Results in the therapy of childhood tuberculous meningitis using modern antituberculotics. Orv. hetil. 99 no.7:241-244 16 Feb 58.

1. A Pecsi Orvostudomanyi Egyetem Gyermekklinikajanak (igazgato: Kerpel-Fronius Odon dr. egyet. tanar) kozlemenye.

(TUBERCULOSIS, MENINGEAL, in inf. & child
ther., streptomycin alone & with isoniazid (Hun))

SZONYI, Laszlo, dr.; JANI, Lajos, dr.

Stevens-Johnson syndrome after virus infection. Orv.hetil. 101 no.35:1250-1252 28 Ag '60.

1. Pecsi Orvostudomanyi Egyetem, Gyermekklinika
(ERYTHEMA MULTIFORME etiol)
(MEASLES compl)
(HEPATITIS INFECTIOUS compl)

SZONYI, L.; LOMBOS, O.; HUTAS, Susanne

Appraisal of the initial symptoms of leukaemia in childhood. Acta paediat Acad Sci Hung 2 no.1:1-5 '61.

1. Department of Paediatrics, University Medical School, Oecs.

(LEUKEMIA in inf & child)

LOMBOS, Oszkar, dr.; SZONYI, Laszlo, dr.; HUTAS, Zsuzsanna, dr.

Difficulties in the evaluation of bone marrow smears in early diagnosis of leukemias in children and adolescents. Gyermekgyogyaszat 12 no.1:16-22 Ja '61.

1. Pecsi Orvostudomanyi Egyetem Gyermekklinikajanak kozlemenye.
(BONE MARROW pathol)
(LEUKEMIA diag)

LOMBOS, Oszkar, dr.; HUTAS, Zsuzsanna, dr.; SZONYI, Laszlo, dr.; GOFMAN, Ljubov[Liubov], dr.

Relation of bone marrow plasmocytes to serum gamma globulins in infancy. Orv. hetil. 102 no.14:637-639 2 Ap '61.

1. Pecsi Orvostudomanyi Egyetem, Gyermekklinika es II Belklinika.

(GAMMA GLOBULIN)
(BONE MARROW anat & histol)

SZONYI, P.

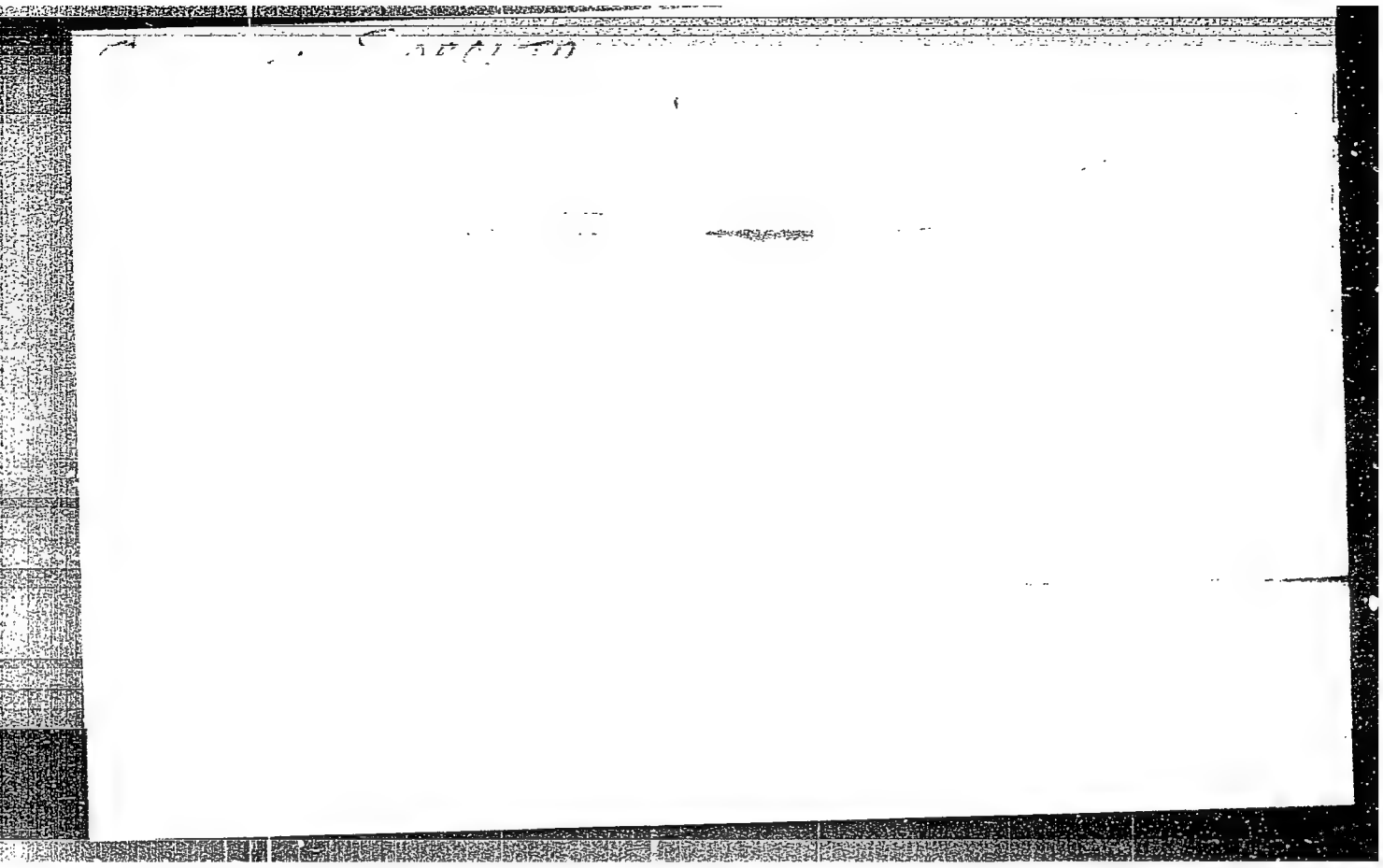
"Analysis of Industrial Enterprises." p. 4 (TOBBTERMELES. Vol. 8, No. 12, Dec. 1954; Budapest, Hungary.)

So: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, April. 1955, Uncl..

SZONYI, S.

The analogy of steam adsorption and condensation. István Halász, Géza Schay, and S. Szonyi (Műszaki Egyetem, Budapest). *Magyar Tudományos Akad. Kém. Tudományok Osztályának Közleményei* 6, 315–28; *Acta Chim. Acad. Sci. Hung.* 8, No. 1–3, 143–50(1955)(in English).—Three relations were derived by means of which the differential desorption (adsorption) heat corresponding to any equil. pressure can be calcd. from data characteristic of adsorption vapor (crit. data, vapor pressure, heat of evapn.). The 1st relation is based on the fact that the Polányi-type potential is independent of temp.; the other 2, however, take the analogy of desorption and evapn. into consideration for the respective condition. With the adsorption isotherm known, the differential adsorption heat can be calcd. from the 3 relations as a function of the coverage of the adsorbent. The adsorption isotherms on SiO_2 gel for furan vapor were detd. When equations were applied to these measurements any equation gave correct results within the limits of errors. Used for the measurements of Honig and Ryerson ((*C.A.* 46, 8458h) A, O_2, and N_2 on rutile at the temp. of liquid air) it turned out it could still be used for relatively small pressures, the deviations rarely exceeding 10%. W. W.

(2)



Szonyi, Szuszanna

EXCERPTA MEDICA Sec.2 Vol.11/5 Physiology,etc. May 58

1890. EFFECT OF TOTAL BODY X-IRRADIATION ON THE RESPIRATION OF THE HOMOGENIZED DUODENAL MUCOSA OF THE RAT - Szonyi S. and Várterész W. Radiobiol. Res. Inst., Budapest - NATURE (Lond.) 1957, 179/4549 (51) Graphs 1 Tables 1

Respiration of duodenal mucosa from animals sacrificed at one, 2, 16 and 20 hr. and then daily for 15 days following exposure to 600 r. was studied. The rate of succinate oxidation was twice the control level at 20 hr. and remained at that level throughout the 15-day observation period. Neither pyruvate nor fumarate oxidation was affected similarly. Castanera - San Francisco, Calif. (II, 14)

SZONYI, Susanne

Effect of a fluoride on the distribution of potassium and sodium and on the binding of CO2 in human blood. Acta physiol. hung. 17 no.1:9-13 '60.

1. Medizinisch-chemisches Institut der Medizinischen Universitat, Budapest.

(FLUORIDES pharmacol.)
(POTASSIUM blood)
(SODIUM blood)
(CARBON DIOXIDE blood)

SZANTO, Gyorgy; SZONYI, Zsuzsa

Conversion of a refrigerator into a refrigerated laboratory. Kiserl. orvostud. 14 no.3:330-331 Je '62.

1. Orszagos Traumatologiai Intezet.
(REFRIGERATION) (LABORATORIES)

OLAH, E.; SZOOR, A.; TANKO, B.

Preparation of nucleic acid from normal and carcinomatous tissues.
Acta physiol. hung. Suppl. no.6:80-81 1954.

1. Biochemisches Institut der Medizinischen Universitat, Debrecen.
(NUCLEIC ACIDS
extraction from normal & cancerous tissues)
(NEOPLASMS
extraction of nucleic acids from)

KOVER, A.; KONYA, L.; KOVACS, L.; SZOOR, A.

Positive inotropic action of cholinesterase on the hypodynamic frog heart. Acta physiol. acad. sci. hung. 22 no.2:145-153 '62.

1. Institute of Physiology, Medical University, Debrecen.
(CHOLINESTERASE) (HEART)

SZCOR, Arpad, KOVER, Andras, KOVACS, Tibor; Medical University of Debrecen, Institute of Physiology (Debreceni Oryostudomanyi Egyetem, Elettani Intezet).

"Preparation of True Cholinesterase From the Striated Muscle of the Rabbit."

Budapest, Acta Physiologica Academiae Scientiarum Hungaricae, Vol XXIII, No 4, 1963, pages 333-337.

Abstract: [English article, authors' English summary] Myosin-free cholinesterase has been prepared from the striated muscle of rabbits. The overall purification was about 20-fold. As regards substrate specificity and substrate inhibition, the purified preparation belongs to the group of true cholinesterases. 12 Western, 5 Eastern European references.

1/1

SZOOR, A.; KOVER, A.; POHANKA, O.

Studies of the specificity of muscle. Cholinesterases. I. The role of active anionic sites. Acta physiol. acad. sci. Hung. 24 no.2:157-163 '63.

1. Institute of Physiology, Medical University, Debrecen.
(CHOLINESTERASE)
(DECAMETHONIUM COMPOUNDS)
(PENTAMETHONIUM COMPOUNDS)
(CHEMISTRY) (MUSCLE PROTEINS)
(HYDROGEN-ION CONCENTRATION)
(MUSCLES)

SZOOR, A.; KOVER, A.; KOVACS, T.

Studies of the specificity of muscle cholinesterases. Acta physiol. acad. sci. Hung. 24 no. 2:165-169 '63.

1. Institute of Physiology, Medical University, Debrecen.

WENT, Istvan, dr., egyetemi tanar [deceased]; SZOOR, Arpad, dr., egyetemi tanarseged

New therapeutic ways for allergic diseases. Term tud kozl 8 no.3:117-120 Mr '64.

1. Institute of Physiology, Debrecen Medical University.

SCHRADI, Antal, dr.; BENE, Julia, dr.; SZABO, Anna, dr.; SZOOR, Arpad, dr.

Ethionamide chloral hydrate in the treatment of pulmonary tuberculosis. Orv. hetil. 106 no.37:1753-1757 12 S'65.

1. Debreceni Orvostudomanyi Egyetem, Tbc Klinika (mb. igazgato: Pongor, Ferenc, dr.) es Klettani Intezet (mb. igazgato: Varga, Emil, dr.).

SZOOR, A.;SZABOLCS, M.; KOVER, A.

The effect of heat treatment on the cholinesterase activity of actomyosin. Acta physiol. acad. sci. Hung. 28 no.3: 217-225 '65.

1. Institute of Physiology and Central Laboratory, University Medical School, Debrecen. Submitted November 25, 1964.

L 15525-66 EWA(j)/EWA(b)-2 RO

ACC NR: AT6007388 SOURCE CODE: HU/2505/65/026/00X/0016/0017

AUTHOR: Szoor, A.; Szabolcs, M.; Kover, A.

ORG: Institute of Physiology and Central Laboratory, Medical University of Debrecen (Debreceni Orvostudomanyi Egyetem, Elettani Intezet es Kozponti Laboratorium)

TITLE: Effect of heat on the cholinesterase activity of actomyosin [This paper was presented at the 29th Meeting of the Hungarian Physiological Society held in Szeged from 2 to 4 July 1964]

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 26, Supplement, 1965, 16-17

TOPIC TAGS: muscle physiology, protein, heat biologic effect, enzyme, rabbit, biochemistry

ABSTRACT: It has been investigated whether the presence of actin would modify the ultracentrifugal homogeneity and the distribution of cholinesterase activity of the fractions obtained by heat treatment from a myosin solution. Pure actomyosin with a cholinesterase activity between 15-30 µg acetylcholine/mg protein/hr was prepared from striated muscles of the rabbit. On exposure to 53° at pH 5.0-8.0 for 5 minutes, the cholin-

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ACC NR: AT6007388

esterase active fraction of the highest specific activity could be separated from actomyosin at pH 6.0-6.2. In subsequent experiments, heat treatment was carried out at pH 6.0-6.2. The liberated fraction (S) was separated by dialysis into a fraction P, precipitated at 0.05 μ, and a fraction D which had remained in solution. The cholinesterase activity was increased in fraction P. The properties of the cholinesterase active fraction, obtained from trypsin-digested actomyosin by heat treatment, undergo significant changes insofar as in such cases the cholinesterase activity is increased not in the P but in the D fraction. [JPRS]

SUB CODE: 06 / SUBM DATE: none

Card 2/2

L 31089-66

ACC NR: AT6022817 SOURCE CODE: HU/2505/65/028/003/0217/0225

AUTHOR: Szoor, Arpad--Ser, A.; Szabolcs, Marton--Sabol'ch, M.; Kover, Andras--Kover, A.

ORG: Institute of Physiology, Medical University, Debrecen (Orvostudomanyi Egyetem Elettani Intezete); Central Laboratory, Medical University, Debrecen (Orvostudomanyi Egyetem Kozponti Laboratoriuma) 14 B+1

TITLE: Effect of heat treatment on the cholinesterase activity of actomyosin

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 28, no. 3, 1965, 217-225

TOPIC TAGS: enzyme, protein

ABSTRACT: The effect of heat treatment has been studied on the cholinesterase activity of actomyosin and of actomyosin digested briefly with trypsin. 1) On heat treatment in the pH range 5.0-8.0, a higher proportion of the total cholinesterase activity remained in solution at the higher pH values. Supernatant solutions with the highest specific activity were obtained at pH 6.0-6.2. 2) The fractions with cholinesterase activity which were liberated from actomyosin solutions can be separated by dialysis into a fraction precipitated at 0.05-0.07 μ (P) and another which remains in solution (D). Fractions P and D have about the same cholinesterase activity. Ultracentrifugal studies indicate that fraction P shows a tendency for aggregation; this is attributed to the presence of actin. 3) The properties of the cholinesterase fractions liberated by heat treatment were greatly altered by trypsin digestion. When the ionic strength of the supernatant liquid was reduced, almost 80 per cent of the total cholinesterase activity remained in solution at 0.05-0.07 μ. The authors thank Dr. E. Varga for his interest and helpful suggestions. Orig. art. has: 3 figures and 3 tables. [Orig. art. in Eng.] [JPRS]

SUB CODE: 06 / SUBM DATE: 25Nov64 / ORIG REF: 006 / OTH REF: 013

Card 1/1 CC 0925 0797

ABERLE, Lajos, Dr.; HAJDU, Jeno, Dr.; VARGA, Ferenc, Dr.; SZOOR, Jozsef, Dr.

Experiences with the complex therapy of peripheral vascular diseases. Orv. hetil. 99 no.46:1613-1615 16 Nov 58.

1. A Hajdu-Bihar Megyei Tanacs Korhaz (igazgato: Manyi Geza dr.) II. sz. Belosztalyanak (foorvos: Aberle Lajos dr.) kozlemenye.
(VASCULAR DISEASES, PERIPHERAL, ther.
intra-arterial drug ther. as adjuvant of surg. evaluation (Hun))

SZOPA, Jerzy, mgr inz.

Repairs performed by the shi 's own crew as ar ssential reserve of the Polish Ocean Lines. Tech gosp morska 15 no.3:101-103 Mr '65.

1. Polish Ocean Lines, Gdynia.

Distr: 4E2c

✓ Intensification of cupola process by periodical enrichment of blast with oxygen. J. Szopa. *Przegląd Odlewnictwa* 9, 142–53(1959).—Intensification of cupola process by enrichment of blast with O was examd. It secured higher temp. of liquid metal, and increased the efficiency of the process. The previous work was discussed, and expts. on periodical enrichment of blast with O in an exptl. cupola, 500 mm. in diam. without a forehearth, and in plant cupola, 900 mm. in diam., with a forehearth, were described. During the melting process in an exptl. cupola the contents of O in the blast ranged from 21 to 28.7%, and the supply time was 14–38 min. An increase of 30–75° in temp. of liquid metal was obtained. Under the plant conditions the concn. of O ranged from 21 to 26.5% and supply time from 15 to 55 min. The increase in temp. of metal on the pouring spout was 15–40°. The av. coeff. of temp. increase per 1 standard cu. m. of O and 1 ton of iron equalled 1.20. In plant cupola the efficiency increase was 0–12.9%. The enrichment of blast with O had superior effects on changes in chem. compn. of the cast iron. The contents of C increased, the oxidation of Si and enrichment of iron with S diminished.

W. Tomaszczyk

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SZOPA, Jozef Stanislaw

(2-Chloroethyl) trimethylammonium chloride and some other ammonium derivatives as plant growth regulators. Postepy nauk roln 11 no. 2:83-91 Mr-Ap '64.

1. Department of Technical Microbiology, Laboratory of Food Industry Raw Materials, Technical University, Lodz.

SZOPA, F.

"Heat Fro a Distance." p. 200 (HORYZONTY TECHNIKI, Vol. 6, No. 5, May 1953) Warszawa

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 10, October 1953. Unclassified.

Szopinska, L. I.

901. SZOPIŃSKA L. I. Klin. Chor. Wewnetr. A. M., Kraków. *Ciśnienie tetnicze na ramieniu i udzie w pozycji lezacej i stojacej u zdrowych i w chorobie nadciśnieniowej *Arterial blood pressure in the upper arm and thigh in recumbent and orthostatic position in healthy subjects and in patients with essential hypertension* Pol. Arch. Med. wewnet. 1956, 26/4 (553—560) Tables 2

Systolic as well as diastolic blood pressure are found to be higher in the thigh than in the upper arm in the supine position. The differences are greater in hypertensive than in healthy subjects and increase in accordance with the stages of essential hypertension. The blood pressure in the arm and in the thigh increases during the active change of the position from horizontal to vertical. This rise is significantly higher in stages I and II of hypertension than in healthy persons; it is highest in stages III of IV of this disease but then only in the thigh, while in the upper arm the blood pressure decreases simultaneously. These observations may be of some practical value for early diagnosis and surgery. Gibinski – Bytom (VI, 18)

KROL, Wladyslaw; SZOPINSKA, Lidia; KOCEMBA, Jozef

Treatment of hypertension with blocking agents of domestic production. Polski tygod. lek. 12 no.24:904-909 10 June 57.

1. (Z I Kliniki Chorob Wewnetrznych A.M. w Krakowie; kierownik: prof. dr. Leon Tochowicz) Adres: Krakow, ul. Kopernika 17. I Klinika Chorob Wewnetrznych A.M.

(METHONIUM COMPOUNDS, therapeutic use, hypertension (Pol))
(HYPERTENSION, therapy, methonium cpds. (Pol))

TOCHOWICZ, L.; KROL,W.; CIBA, T.; KOCEMBA, J.; SZOPINSKA, L.

Effect of nutrition on the cholesterol level and turbidity of the blood serum. Polskie arch.med. wewn. 30 no.7:881-883 '60.

1. Z I Kliniki Chorob Wewnetrznych A.M. w Krakowie Kierownik: prof. dr med. L.Tochowicz Opracowanie statystyczne: J.Czyzynski z Katedry Statystyki W.S.E. Kierownik: prof. dr J.Fierich
(CHOLESTEROL in blood)
(DIET exper)

TOCHOWICZ, Leon; SZOPINSKA, Lidia; CIBA, Tadeusz

Behavior of glycemic curves in atherosclerotic patients after glucose load. Polskie arch.med.wewn. 30 no.7:932-934 '60.

1. Z I Kliniki Chorob Wewnetrznych A. M. w Krakowie Kierownik: prof. dr med. L. Tochowicz
(ARTERIOSCLEROSIS blood)
(BLOOD SUGAR)

TOCHOWICZ, Leon; SZOPINSKA-CIBA, Lidia; CIBA, Tadeusz

Sugar curves in patients with atherosclerosis. Polski tygod. lek. 16 no.20:746-749 15 My '61.

1. Z I Kliniki Chorob Wewnetrznych A.M. w Krakowie; kierownik: prof. dr Leon Tochowicz.

(ARTERIOSCLEROSIS blood) (BLOOD SUGAR)

TOCHOWICZ, Leon; CIBA, Tadeusz; KOCEMBA, Jozef; SZOPINSKA-CIBA, Lidia

Seasonal variability of the cholesterol level in the blood serum. Pol. tyg. lek. 17 no.16:587-592 16 Ap '62.

1. Z I Kliniki Chorob Wewnetrznych AM w Krakowie; kierownik: prof. dr Leon Tochowicz.

(CHOLESTEROL blood) (WEATHER) (PERIODICITY)

KROL, Wladyslaw; CIBA, Tadeusz; KOCEMBA, Jozef; SZOPINSKA-CIBA, Lidia; TOCHOWICZ, Leon

Effect of diet on the turbidity of the blood serum. Pol. tyg. lek. 18 no.40:1473-1478 30 S '63.

1. Z I Kliniki Chorob Wewnetrznych AM w Krakowie; kierownik: prof. dr Leon Tochowicz.

(BLOOD CHOLESTEROL) (BLOOD LIPIDS)
(BLOOD CHEMICAL ANALYSIS)
(OCCUPATIONS AND PROFESSIONS)
(ARTERIOSCLEROSIS) (STATISTICS)
(DIET)

CIBA, Tadeusz; KOCEMBA, Jozef; KROL, Wladyslaw; SZOPINSKA-CIBA, Lidia; TOCHOWICZ, Leon.

Effect of nutrition on the total cholestrol level in the blood serum. Pol. tyg. lek. 18 no.45:1675-1679 4 N'63.

1. Z I Kliniki Chorob Wewnetrznych AM w Krakowie. Kierownik: prof.dr. Leon Tochowicz.

SZOPINSKA-CIBA, Lidia; WOJCIKIEWICZ, O.; CIBA, Tadeusz

Outpatient treatment of recently detected diabetes mellitus.
Pol. tyg. lek. 20 no.22:808-809 31 My '65.

1. Z I Kliniki Chorob Wewnetrznych AM w Krakowie (Kierownik: prof. dr. Leon Tochowicz) i z Wojewodzkiej Poradni Cukrzycowej dla Doroslych w Krakowie (Kierownik: dr. Lidia Szopinska-Ciba).

CIBA, Tadeusz; SZOPINSKA-CIBA, Lidia

Incidence of diabetis in hypertension. Pol. tyg. lek. 20 no.34: 1284-1286 23 Ag '65.

1. Z I Kliniki Chorob Wewnetrznych AM w Krakowie (Kierownik: prof. dr. Leon Tochowicz).

SZOPINSKI, S.

Prospects of the development of automobile and railway transportation. p. 233. (MOTORYZACJA. Vol. 12, no. 9, Sept. 1957, Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957. Uncl.

85478

P/031/60/005/002/002/004
A222/A026

9.7300

AUTHORS: Stempień, Andrzej; Szoplinski, Zbigniew

TITLE: Analog-Discrete Converter for Analog Computers

PERIODICAL: Archiwum Automa-tyki i Telemechaniki, 1960, Vol. 5, No. 2, pp. 217-
- 223.

TEXT: The authors describe an analog-to-discrete converter intended to translate continuous into discrete magnitudes in analog computers. The circuit has an accuracy of 0.2% and was employed with a "Short's General Purpose Computer" made by Short Brothers and Harland Ltd. Electronic switches are basic components of the converter. A circuit diagram of the switch as worked out by the authors is shown in Figure 2. The circuit consists of three stages indicated in the diagram (Fig. 2) by Roman figures. Stage I is an input-voltage analyzer, stage II is a two-step d-c amplifier with an amplification of K = 500 v/v and linear performance ranging from -115v to + 45 v. The amplifier becomes saturated beyond this range. A diode-switch proper, controlled by output voltage from d-c amplifier constitutes Stage III of the circuit. Figure 3 shows a block diagram of the

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A222/A026

Analog-Discrete Converter for Analog Computers

converter, which consists of ten parallelly circuited electronic switches. Five of the switches are for positive input voltages and another five for negative input voltages. Triggering voltage for each of the switch groups of 5 is optionally adjusted by potentiometers within the range of from 0 to + 50 and 0 to - 50 volts respectively. The summation diagram of the current i as a function of input voltage E_{we} for proper potentiometer positions is shown in Figure 5. If the converter is linked to the input of an operational amplifier as shown in Figure 6, the output voltage will be a function of the input voltage. The analog-to-discrete converter may be extended by the addition of more steps. The converter was built at the Katedra Automatyki i Telemechaniki (Department of Automation and Telemechanics) of the Politechnika Warszawska (Warsaw Polytechnic). An oscillogram of the step-voltage characteristics of the converter is shown in Figure 8. There are 8 figures.

ASSOCIATION: Polska Akademia Nauk, Zakład Automatyki (Polish Academy of Sciences, Department of Automation) (Stempień Andrzej); Politechnika Warszawska, Katedra Automatyki i Telemechaniki (Warsaw Polytechnic, Department of Automation and Telemechanics) (Szoplinski, Zbigniew).

SUBMITTED: September 18, 1959

Card 2/2

22349
P/031/60/005/004/004/005
A224/A126

9.3220

Stempień, A., and Szopliński, Z.

TITLE: A nonlinear converter for simulating relay characteristics with a dead zone and a hysteresis loop

PERIODICAL: Archiwum automatyki i telemechaniki, v. 5, no. 4, 1960, 441-447

TEXT: The paper describes an improved design of the nonlinear converter built by the author for the English-made "Short" analog computer installed at the Katedra Automatyki i Telemechaniki Politechniki Warszawskiej (Department of Automation and Remote Control of the Warszawa Polytechnical Institute). The basic advantage of the improved converter design, shown in Fig. 5, is the use of two operating amplifiers in lieu of the seven operating amplifiers in the original design. The elimination of the 5 amplifiers cuts the price of the device, increases the reliability of its operation, and considerably improves its frequency characteristic. A photograph of the improved nonlinear converter is given in Fig. 8. There

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A224/A126

A nonlinear converter ...

are 5 oscillograms, 7 figures, 1 photograph, and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Polska Akademia Nauk Zakład Automatyki (Institute of Automation of the Polish Academy of Sciences). Politechnika Warszawska Katedra Automatyki i Telemechaniki (Department of Automation and Remote Control of the Warszawa Polytechnical Institute).

SUBMITTED: March 16, 1960

Card 2/4

A nonlinear converter ...

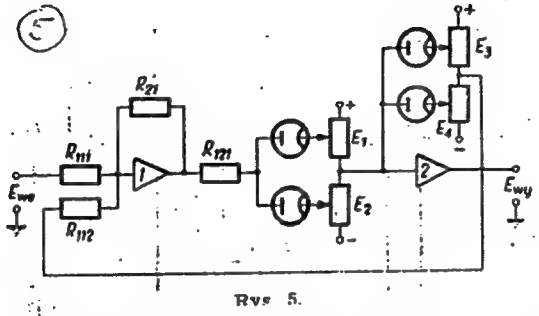

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Fig. 5 : Improved design of nonlinear converter

Card 3/4

A nonlinear converter ...

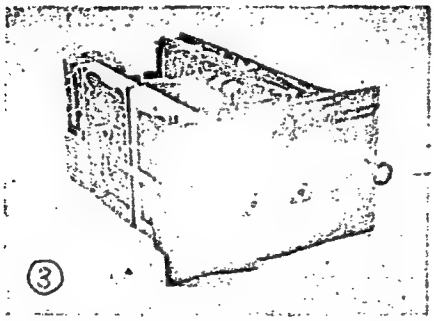


Fig. 8 : Improved nonlinear converter

Card 4/4

S/263/62/000/004/001/009
I004/I204

AUTHORS: Stempień, Andrzej and Szopliński, Zbigniew

TITLE: Analog to digital converter

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Ismeritel'naya tekhnika, no. 4, 1962, 3, abstract 32.4.18 [Politechnika Warszawska. (Katedra Automatyki i Telemechaniki)]. Polish patent, class 42d, 1/01, no. 44162, February 10, 1961

TEXT: A converter has been patented which works on the principle of digit coding or on a method based on the use of a step sawtooth voltage. The reference voltages are created by summation of currents, the values of which are related. There are 6 figures.

[Abstracter's note: Complete translation.]

Card 1/1

P/031/62/007/001/020/021
D265/D308

9,7308

AUTHORS: Hoffman, Zbigniew, and Szopliński, Zbigniew

TITLE: The analogue computer type 'KAiT-P.W.' and its cooperation with the 'Short's' analogue computer

PERIODICAL: Archiwum automatyki i telemechaniki, v. 7, no. 1-2, 1962, 375 - 380

TEXT: The constructional features, general characteristics and operating parameters of the analogue computer type 'KAiT-P.W.' developed at the Department of Automation and Remote Control Engineering of the Polytechnic Institute of Warsaw are described in this paper. The technique of suitably coupling this computer with the general purpose computer type 'Short' is explained and the economics of such an arrangement is discussed. There are 5 figures.

ASSOCIATION: Katedra automatyki telemechaniki politechniki Warszawskiej (Department of Automation and Remote Control Engineering of the Warsaw Polytechnic Institute)

Card 1/1

P/031/62/007/003/007/013
D201/D308

4,7720

AUTHOR: Szoplinski, Zhigniew

TITLE: Methods of determining dynamic errors in analog computation

PERIODICAL: Archiwum Automatyki i Telemechaniki, v. 7, no. 3-4, 631-642 — 1962

TEXT: The author presents a method of determining and compensating for the dynamic errors due to non-linear operational components in analog computers and describes its application to the solution of non-linear differential equations with variable parameters, in particular of the Mathieu equation. The method is based on the use of the dynamic error analogs as non-linear components with continuous characteristics and on the fact that the parameters of certain types of non-linear quasi-continuous components can be adjusted in dynamic conditions, which in turn results in an effective error-compensating component. The application of the above method made it possible to reduce in practice the dynamic error of

Card 1/2

certain types of analog components down to 0.1 - 1%. There are 17 figures.

ASSOCIATION: Politechnika Warszawska, Katedra Automatiki i Telemechaniki (Warsaw Polytechnic, Department of Automation and Telemechanics)

SZOPLINSKI, Zbigniew

Possibilities of determining dynamic errors in analogue computer processes. Archiw automat 7 no.3/4:631-643 '62.

1. Katedra Automatyki i Telemechaniki, Politechnika, Warszawa.

SZOPOWSKI, Zbigniew, mgr inz.

Wooden and steel locks of prefabricated concrete plank piles designed in the Designing Office for Maritime Engineering. Tech gosp morska:Suppl.:Biul tech BPBM no.4:13-16 Je '63.

1. Pracownia Hydrotechniczna, Biuro Projektow Budownictwa Morskiego, Gdansk, Waly Piastowskie 24.

SZOPLINSKI, Zbigniew

Systematic errors in the solution of problems on analog computers and a method for their compensation. Archiw automat 9 no.3:309-323 '64.

1. Department of Automatic Control and Telemechanics of the Technical University, Warsaw.

MIKA, Jozsef; SZOPORY, Bela

"Multiplication" process of the photoelectric end-point ultramicrotitrations.I. (To be contd). Magy kem folyoir 67 no.3:129-137 Mr '61.

1. Miskolci Nehezipari Muszaki Egyetem Kemiai Tanszeke.

SZOPOWSKI, Abigniew, mgr inz.

Wooden and steel closing structures of prefabricated ferroconcrete pile planks designed in the Designing Office for Maritime Engineering. Tech gosp morska 13 no.10:Supplement: Biul Tech B P B M no.5:20 O '63.

1. Pracownia Hydrotechnicana, Biuro Projektow Budownictwa Morskiego, Gdansk.

SZOFOWSKI, Z.

Variations of the sea level in Polish harbors. p.17

ROZPRAWY HYDROTECHNICZNE. (Polska Akademia Nauk. Instytut Budownictwa Wodnego)
Warszawa, Poland. no.4, 1958

Monthly List of East European Accessions Index, (EEAI) LC, Vol.8, no.6
June 1959
Uncl.

SZOPOWSKI, Z., mgr inz.

Present problems of building a waterway in the Stettin Lagoon. Tech gosp morska 10 no.7/8:221-224 Jl-Ag '60. (ERAI 9:11)

1. Instytut Budownictwa Wodnego PAN, Gdansk
(Poland--Harbors)
(Stettin--Harbor)

SZOPOWSKI, Z., mgr., inz.

Analysis of servicing small general cargo ships in Polish and Scandinavian ports. Tech gosp morska 10 no.10:307-309 O '60.

1. Instytut Budownictwa Wodnego Polskiej Akademii Nauk, Gdansk.

SZOPOWSKI, Z., mgr inz.

The Naval Research Institute in the German Democratic Republic.
Tech gosp morska 10 no.11:357-358 N '60. (EEAI 10:3)

1. Institut Budownictwa Wodnego PAN
(Germany,Eastern--Naval research)

SZOPOWSKI, Zbigniew

Selection of slenderness of deep foundation elements with regard to the resistance characteristics of the ground. Rozprawy hudrotechn no.9:79-92 '61.

SZOPOWSKI, Z., mgr., inz.

First months of cargo loading and unloading in the Kolberg harbor. Tech gosp morska 11 no.2:41-42 F '61.

1. Instytut Budownictwa Wodnego Polskiej Akademii Nauk, Gdańsk.

SZOPOWSKI, Zbigniew

Preliminary dimensioning of gravity breakwaters located on non-cohesive soils as based on their stability conditions. Rozprawy hydrotechn no.10:53-83 '62.

1. Instytut Budownictwa Wodnego, Polska Akademia Nauk, Gdansk.

HAUPTMANN, J., mgr inz.; SZOPOWSKI, Z., mgr inz.

Working draft for the dry-dock construction at the Paris Commune Shipyard in Gdynia. Tech gosp morska 12 no.11:331-334 N '62.

1. Biuro Projektow Budownictwa Morskiego, Gdansk.

SZOPOWSKI, Zbigniew, mgr inz.

Typical design of prefabricated concrete piles with square cross section. Tech gosp morska 13 no.3: Suppl.: Biul techn biura proj bud mor no.3: 9-12 Mr '63.

1. Pracownia Hydrotechniczna, Biuro Projektow Budownictwa Morskiego, Gdansk.

SZOPOWSKI, Zbigniew, mgr inz.

Classification of special construction engineering for navigation purposes. Tech gosp morska 13 no.10:Supplement: Biul Techn B P B M no.5:19 O '63.

1. Pracownia Hydrotechniczna, Biuro Projektow Budownictwa Morskiego, Gdansk.

SZOPOWSKI, Z., mgr inz.

Testing the stability of the backfill benches revetted by a resistance construction of the gravitational type. Tech gosp morska 14 no. 4: Supplement: Biul techn B P B M no. 7: 25-28 Ap '64.

1. Laboratory of Hydraulic Engineering, Designing Office for Maritime Construction, Gdansk.

SZOPOWSKI, Z., mgr inz.

Testing the stability of backfill berms protected by a gravitation type resistance construction. Tech gosp morska 14 no. 7:Suppl:Biul techn BPBM no. 8:31-32 Jl '64.

1. Hydroengineering Laboratory, Design Office of Maritime Construction, Gdansk.

SZOPOWSKI, Zbigniew, mgr inz. (Gdansk)

Prospective development plan of the Gdansk Seaport and the necessity of accomodating large sea vessels. Tech gosp morska 15 no.3:92-95 Mr '65.

SZOPOWSKI, Z., mgr inz.

Prefabricated ferroconcrete parts in the surface construction of plated quays produced in the Szczecin Seaport. Tech gosp morska 15 no.3:Suppl:Biul techn BPBM no.12:46-48 Mr '65.

1. Laboratory of Hydraulic Engineering of the Design Office for Maritime Constructions, Gdansk.

SZOPP, H.

Abs Jour : Ref Zhur - Biol., No. 1, 1958.

m Author : R. Barbu, N. Enescu, A. Lupu, H. Maier, M. Saragea, N. Stereseu, H. Szopp.

Inst. : -

Title : An Experimental Study of the Biliary Function on the Liver after Resection of the Stomach.

Orig Pub : Med. interna. 1957. No 2, 220-230

Abstract : Surgical resection of the stomach in dogs changed the mechanism of biles evacuation into the intestine. These modifications in the evacuation of bile were depending on changes in bile secretion by hepatic cells, changes in the bile bladder (atonia) and a prolonged relaxation of Oddi's sphincter.

SZOPSKI, Kazimierz, mgr. inz.

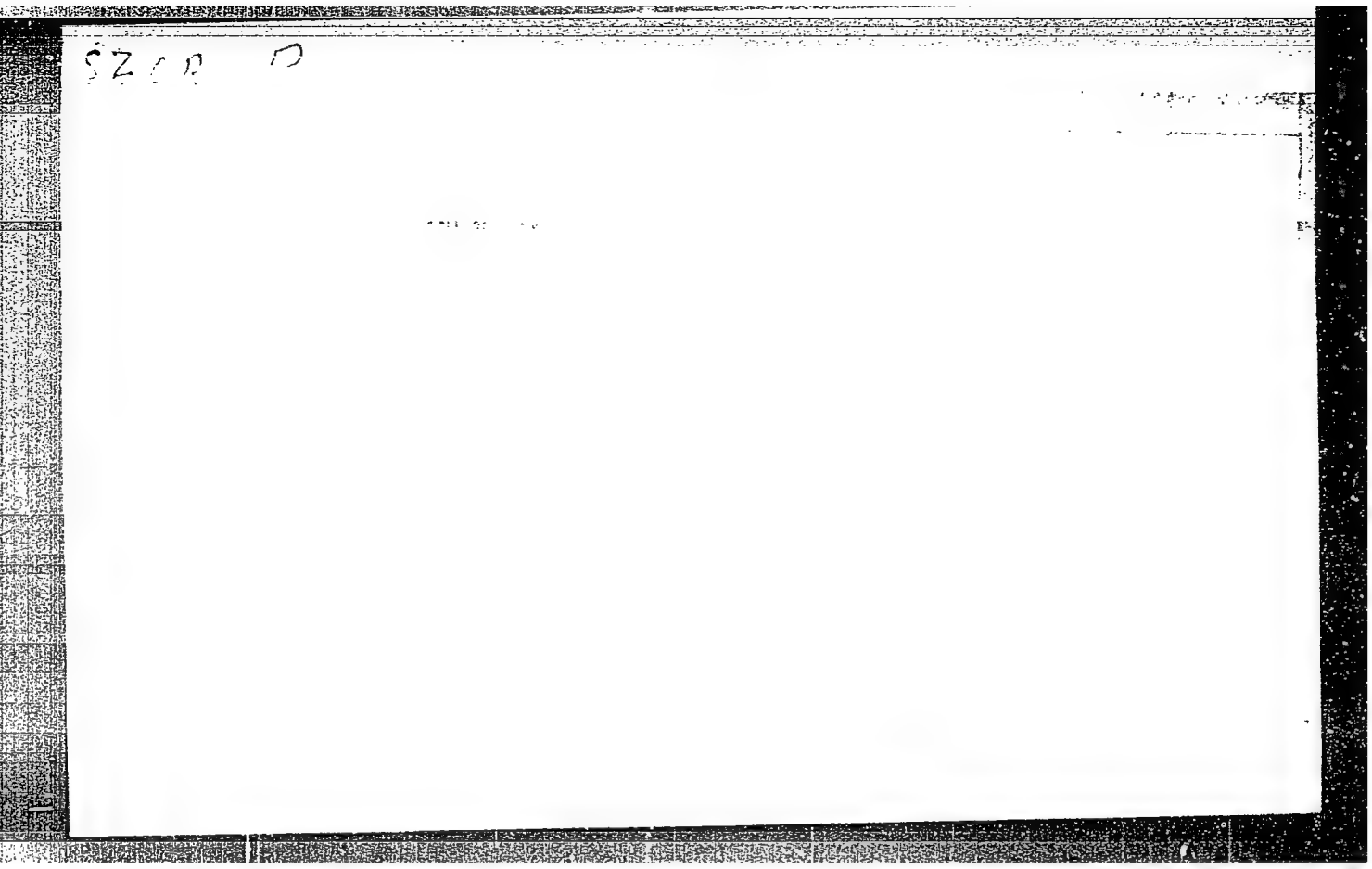
A conference of scientists and representatives of the industry on a plan for the State Publishing House in Technology: on publications in the field of metallurgy. Przegl techn 79 no.6:236 Mr '58.

SZOR, P.

HUNG

CERM

Thermoelastic behavior of soft rubber. Péter Szor (Zentralforschungslab. Chemiefaser, Budapest). *Acta Chim. Acad. Sci. Hung.* 1, 109-15(1951)(In German). It is shown for the elasticity of rubber that the thermodynamic relations of Elliott and Lippmann (*C.A.* 29, 1503⁹) and Gee (*C.A.* 41, 611a), and Bartenev (*C.A.* 44, 6181g, 1151) are the same, but that the equation derived by Bartenev gives a more general picture of the thermal behavior. A series of measurements showed that for compression up to about 20% the internal energy did not change, and that Bartenev's equation could therefore be used correctly up to this point. It was further shown that the modulus of elasticity in compression increases linearly with the abs. temp.



SZOR, PETER

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61722

Author: Szor, Peter

Institution: None

Title: Viscous-Elastic Behavior of Rubberlike High Molecular Polymers. Part I. Theory of Relaxation Spectra of Alfrey Taking into Account the Empirical Formula $\lg\eta-\sqrt{M}$ and Its Correlation with Deformation Under Constant Stress

Original Periodical: Kaucsukszeru nagymolekulaju polimerek viszkoelasztikus viselkedese. I. A kesleltetesi idospektrum Alfrey-fele elmelete a $\log\eta-\sqrt{M}$ tapasztalati keplet figyelembevetelevel valamint osszerfuggese a deformacioval allando feszultseg alatt, Magyar tud. akad. kem. tud. oszt. kozl., 1955, 6, No 3-4, 263-271; Hungarian

Abstract: On the basis of the theory of Alfrey, but rendering more precise some of its premises the author has derived a theoretical equation for the dependence of deformation upon time taking into account the

Card 1/3

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61722

Abstract: modified relaxation spectrum of polydispersed high-molecular compound. On determining the spectrum of relaxation time of macromolecule the author introduces into the expression of relaxation time $\tau = \eta/G$ the viscosity equation of Eyring. Value of entropy of activation can be determined from the empirical equation of Flory. Constants of the equation thus obtained, that is analogous to Alfrey's equation, have according to the author a more definite expression for the spectrum of relaxation time it follows that on constant stress deformation increases linearly with time until reaching the value of least time of relaxation; within the interval between least and greatest time of relaxation it is a function of the square of the time logarithm; starting with the time corresponding to the maximum time of relaxation it becomes independent thereof. Consequently if the time of observation t is less than the minimum time of relaxation τ_o, the material behaves as a viscous material, if t is greater than the maximum time of relaxation τ_m, the material behaves as an ideally resilient material; in the region between τ_o and τ_m the material is highly elastic. In the case of a polydispersed material these correlations are rendered

Card 2/3

SZOR, PETER

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61723

Author: Szor, Peter

Institution: None

Title: Viscous-Elastic Behavior of Rubberlike High Molecular Polymers. Part II. Change in Deformation of Natural Rubber Under Constant Stress

Original Periodical: Kaucsukszeru nagymolekulaju poliumerek viszkoelasztikus viselkedese. II. Nyerskaucsuk deformaciojanak idobeli valtozasa allando feszultseg alatt, Magyar tud. akad. kem. tud. oszt. kozl., 1955, 6, No 3-4, 273-280; Hungarian

Abstract: Experimental verification was carried out of the correctness of the derived (see Part I, preceding abstract) theoretical formulas. Investigated were changes in deformation with time at constant magnitude of the stress. The experimental curve is well defined by the theoretically derived equation on assuming the existence of 2

Card 1/3

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61723

Abstract: different spectra of relaxation time and correspondingly of 2 deformation mechanisms. The data obtained permit to assume that one of the spectra of relaxation time is determined by motion of methylene groups and the other spectrum by independent motion of the segment consisting of 20-30 atoms of the chain. The occurrence of 2 mechanisms is explained by the author by formation of "nodes," i.e., by enhanced interaction between definite elements of adjoining macromolecules which decreases the freedom of motion of these elements. Motion of the segment between 2 nodes corresponds to the second mechanism, displacement of elements at the nodes corresponds to the first mechanism. Viscous flow is associated with the second mechanism. Therefore the energy of activation (E_2) of minimum time of relaxation must correspond to the energy of activation of polymer viscosity. Displacement of elements is analogous to the motion of molecules of a low molecular substance, its (E_1) must correspond to (E_{act}) of low molecular liquids. From the performed experiments on investigation of the temperature dependence of change in deformation with time in the interval 0-50° there have been determined the values E_1 = 5 kcal/mol (E_{act} of viscosity of low molecular

Card 2/3

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61723

Abstract: liquids is 2-3 kcal/mol), E_2 = 13.2 kcal/mol (E_{act} of viscosity of high molecular compounds is 10 kcal/mol). Behavior of synthetic rubber Buna S-3 is qualitatively analogous to that of natural rubber but involves quantitative differences.

Card 3/3

SZOR, PETER

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61724

Author: Szor, Peter

Institution: None

Title: Viscous-Elastic Behavoir of Rubberlike High Molecular Polymers. Part III. Principle of Superposition

Original Periodical: Kaucsukszeru nagymolekulaju polimerek viszkoelasztikus viselkedese. III. A szuperpozicio elve, Magyar tud. akad. kem. tud. oszt. kozl., 1955, 6, No 3-4, 281-282; Hungarian

Abstract: The derived and experimentally proved equation of deformation change with time (see Parts I and II, preceding abstracts) holds only in the instance when internal stresses are fully absent in the material during application of stress. If during time t there has been applied to the sample a stress μ_1, and beginning with instant t_1 there is applied thereto the expression $[\text{sic}]\mu_2$, the deformation curve is defined by the equation $\gamma(t) = \mu_1[F_1(t + t_1) + F_2(t + t_1)] +$

Card 1/2

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61724

Abstract: $(\mu_2 - \mu_1)[F_1(t) + F_2(t)]$, wherein $\gamma(t)$ is change in deformation with time, F_1, F_2 functions calculated on the basis of 2 independent spectra of time of relaxation. This equation expresses the idea of superposition of the influence of the stress. Experimental curves obtained with t = 3,600 seconds, μ_1 = 1.27 kg/cm^2 and μ_2 = 2.54 kg/cm^2; with t = 3,600 seconds, μ_1 = 2.54 kg/cm^2, μ_2 = 2.7 kg/cm^2 coincide with the theoretical within the experimental error.

Card 2/2

SZOK, PETER

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61725

Author: Szor, Peter

Institution: None

Title: Viscous-Elastic Behavior of Rubberlike High Molecular Polymers. Part IV. Change with Time in the Deformation of Vulcanized Rubber Under Constant Stress

Original Periodical: Kaucsukszeru nagymolekulaju polimerek viszkoelasztikus viselkedese. IV. Vulkanizalt gumi allando feszultseg alatti deformaciojanak idobeli valtozasa, Magyar tud. akad. kem. tud. oszt. kozl., 1955, 6, No 3-4, 283-288; Hungarian

Abstract: The assumption concerning 2 mechanisms of deformation (see Part II) was verified by the author using as a model samples of vulcanized rubber with different sulfur content. Since the size of segments is smaller in vulcanized rubber than in the initial, and the time of their relaxation can be shorter than the time of observation, it

Card 1/2

Hungary/Chemistry of High-Molecular Substances, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61725

Abstract: is necessary to take into account the distribution of elements between the sulfur bridges. In accordance thereto in the equation of dependence (t) it is necessary to introduce the distribution of molecular weights of sections of chains in the network: $\varphi(m)dm = \frac{\nu_0 M^{\nu_0-1}}{(M-M_1)^{\nu_0}\Gamma(\nu_0-1)}\left(1-\frac{m}{M}\right)^{\nu_0-1}dm$, wherein ν_0 is the number of bridges per macromolecule, M_1 the molecular weight of section between nearest double bonds. Since ν_0 is correlated with the sulfur content of the rubber, the equation taking into account $\varphi(m)$ provides a good description of the behavior of rubbers vulcanized with different amounts of sulfur.

Card 2/2

S20R, P.

Stress-strain relations in rubber blocks under compression. II. O. Dessowffy, G. Schaz, and P. Szór. *Acta chim. hung.*, 1953, 7, 393—401; cf. *ibid.*, 1952, 1, 317).—The formula previously derived relating stress to shape on compression (*loc. cit.*) is applied to rectangular and annular rubber blocks. Measurements show that the equation is valid for brick-shaped bodies, but for annular bodies it only is applicable up to about 20% deformation if the formula is modified.

C. A. SLATER.

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M.A. YOUTZ

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SZÖR, P.

Visco-elastic behaviour of rubber-like high polymers. I. The Alfrey theory of the distribution of retardation times, with special reference to the empirical relation between log η and $M^{3.4}$ and its correlation with deformation at constant stress. II. Deformation of raw rubber under constant stress as function of time. III. Superposition principle. IV. Deformation of vulcanised rubber under constant stress as function of time. P. Szőr. V. Derivation of distribution of retardation times on the basis of the empirical linear relation between log η and log M and its connexion with deformation at constant stress. G. Schay and P. Szőr (*Acta chim. hung.*, 1955, 8, 57—74; 75—96; 97—102; 103—114; 115—132).—I. A new form of Alfrey's equation for the distribution function of retardation times (τ) is developed and is then used to determine, for one mol. of the polymer, the deformation $\gamma(t)$ at constant stress with time (t). The results enable the viscous, visco-elastic or gelastic behaviour of high-mol. wt. polymers to be related to mol. structure. Over an extended time interval (depending on the length of polymer chain) deformation is a quadratic function of log t. For a polymer composed of mol. of different sizes, increase of $\gamma(t)$ with t is retarded to an extent depending on the ratio (mol. behaving elastically/total no. of mol.). An equation relating $\gamma(t)$ with the mol. wt. distribution function, $\phi(m)$, is developed.

II. Measurements on natural rubber show that the above theoretical relation between $\gamma(t)$ and t is valid only if two different time spectra of τ are assumed, with different min. retardation times and min. mol. masses of chain groups. One spectrum involves a CH_2-group as least unit, and the other segment movement with ±20—30 chain atoms. This twofold behaviour of the polymer is explained by the differing mobilities of chain atoms at the nodal points. The effect of temp. on the time-deformation curve can,

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M. A. YOUTZ
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G. Schay

in agreement with theory, be explained in terms of two activation energies characterizing the temp.-dependence of the η of low-mol. wt. liquids and of polymer, respectively. Between 0° and 36° the behaviour of Buna-S3 simulates that of natural rubber, but above 49·8° there is some true flow although no permanent deformation occurs.

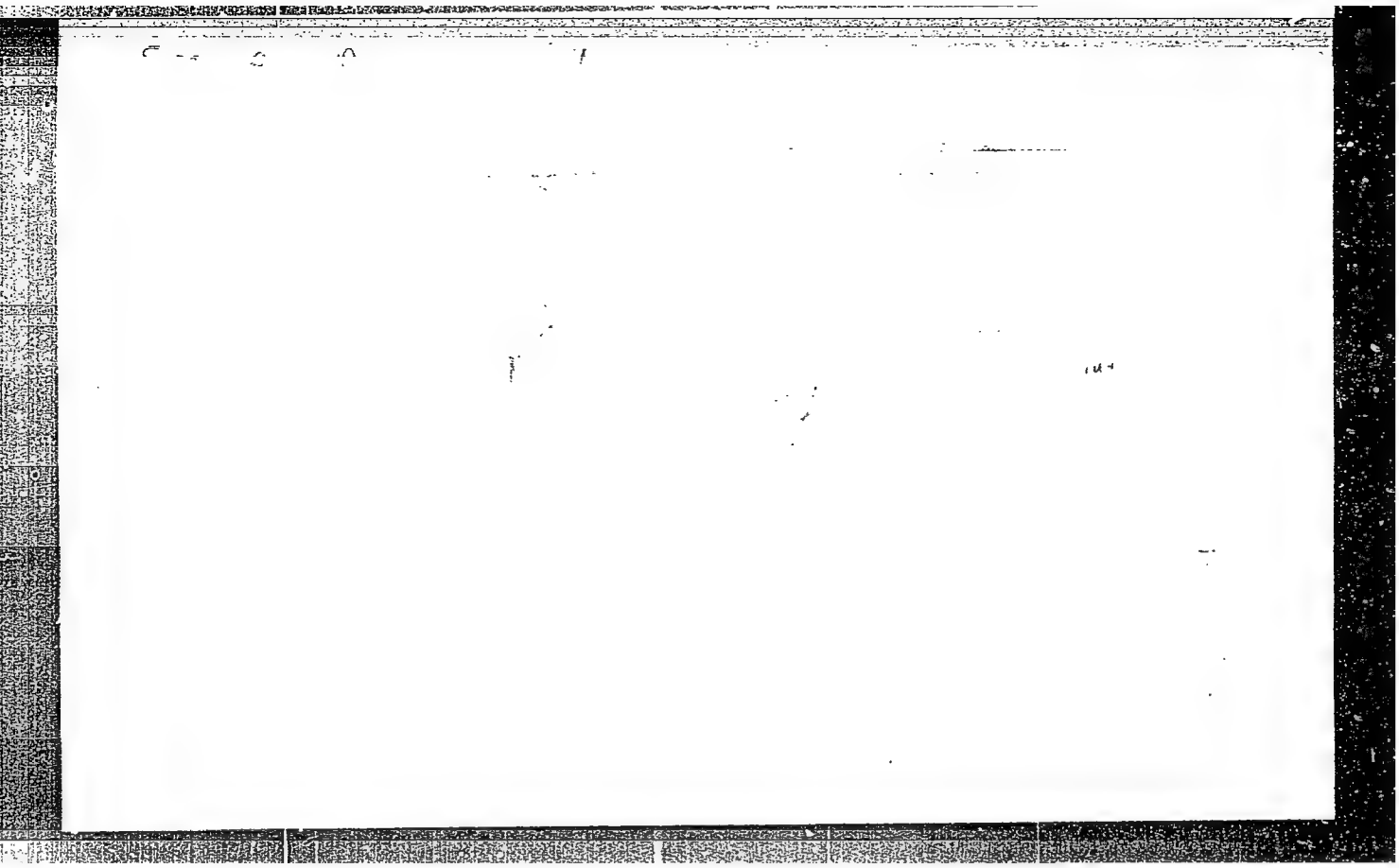
III. It is shown theoretically and experimentally that when the specimen is not initially free from internal stress, the two different spectra of retardation times for natural rubber (cf. Part II) can be derived by applying the principle of superposition of stresses.

IV. There is no difference between the retarded (first) mechanism of natural and vulcanized rubber (0·5—1·5% S), but the second mechanism is absent in the vulcanized material. By considering the mol.-wt. distribution of polymer chains, an equation relating $\gamma(t)$ with t for vulcanized rubber at constant stress is derived and is shown to be in agreement with the observed time–deformation curves for vulcanized rubbers at 25°.

V. Fox *et al.* have established that for high-mol. wt. polymers $\log \eta$ is $\propto \log M$. The effect of this on the distribution function of τ (cf. Part I) is examined, and a new equation relating $\gamma(t)$ with t at constant stress is derived and its validity is tested experimentally. The modified values of $\gamma(t)$ thus obtained and based on the $\log \eta$–$\log M$ relation are valid in practice only if an instantaneous elastic deformation is assumed. A satisfactory qual. explanation of the visco-elastic behaviour of high-mol. wt. polymers is based on a mol. mechanism (springs and gliding elements) developed from a comparison of the experimental and theoretical time–deformations reported in Parts I—V.

W. J. Baker.

3/2 RM



Category : HUNGARY/Atomic and Molecular Physics - Physics of high-molecular substance D-9

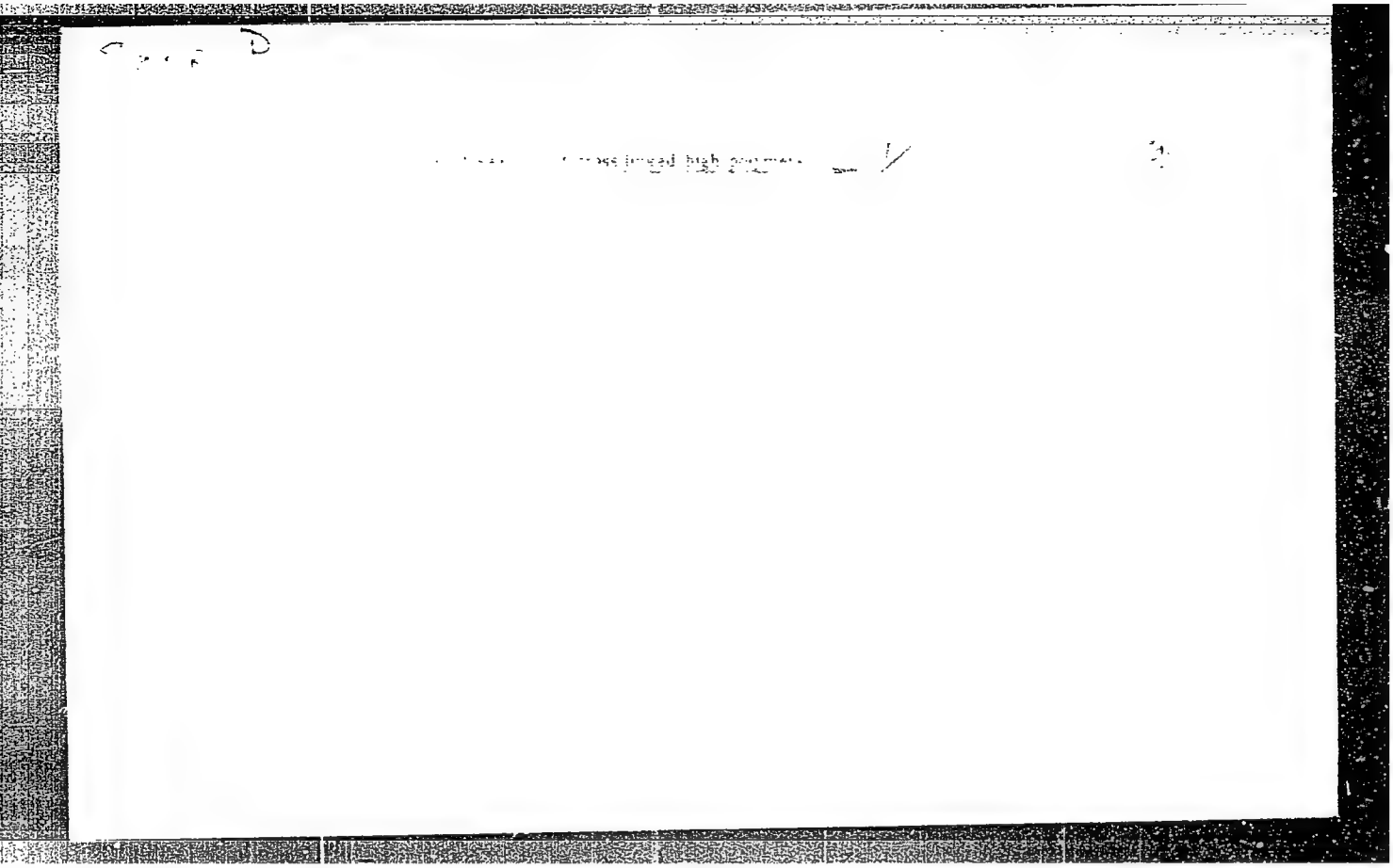
Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1002

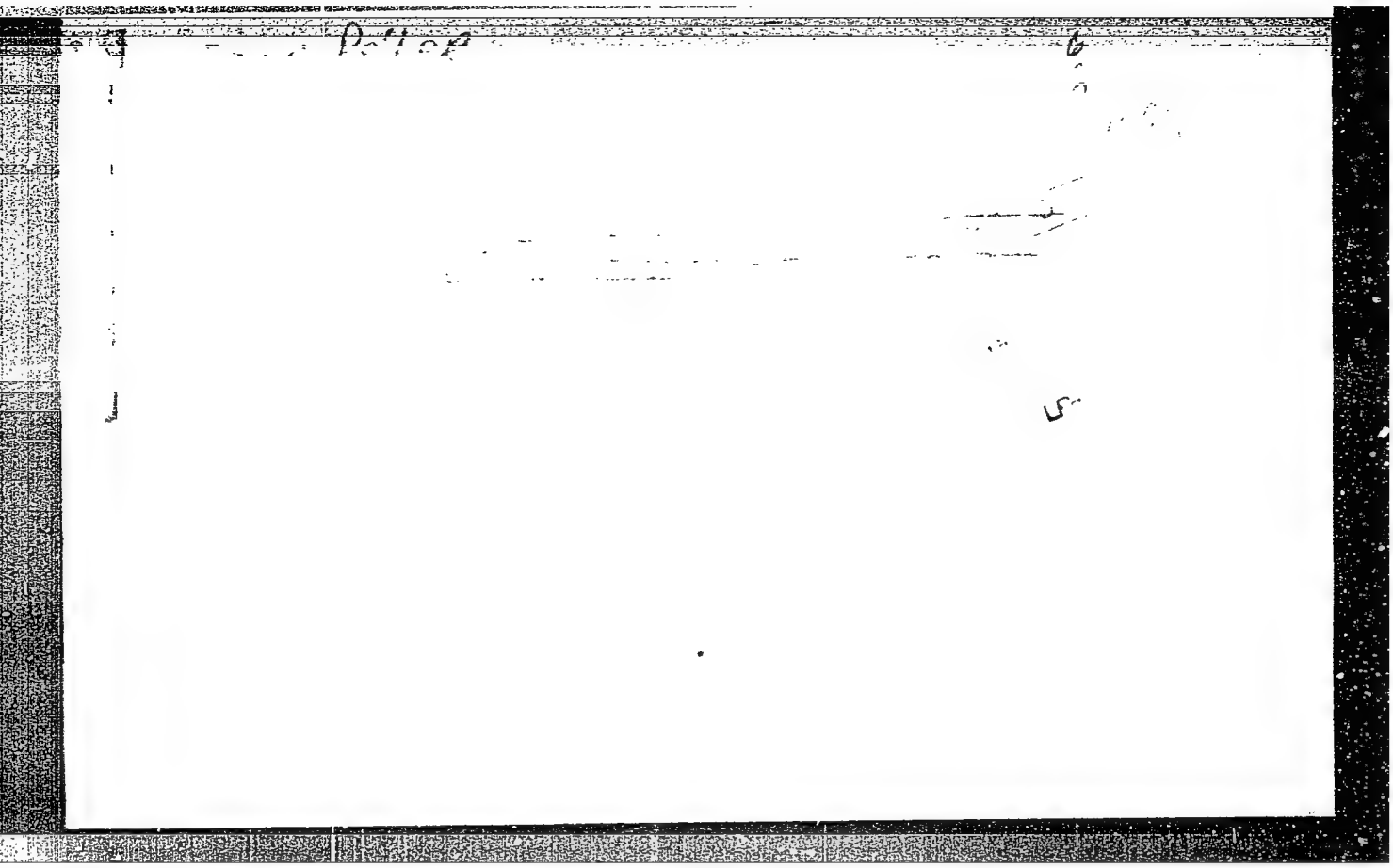
Author : Schay, G., Szor, P.
Title : Viscoelastic Properties of Rubber-Like High Polymers. V. Derivation of the Distribution of Retardation Times on the Basis of the Linear Relation Between log η and log M and its Connection with Deformation at a Constant Stress

Orig Pub : Acta Chim. Acad. sci. hung., 1955, 8, No 1-3, 115-132

Abstract : No abstract

Card : 1/1





S/081/62/000/015/032/038
B171/B101

AUTHORS: Pintér, Tihamér, Karlinszky, László, Szőr, Péter

TITLE: Process for making a white active filler

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1962, 581, abstract 15P310 (Hungarian Patent 147411, August 31, 1960)

TEXT: A white active filler (for rubber mixtures) is prepared by calcination of $Al(OH)_3$ during 0.5-2 hours (preferably ≤ 1) in furnaces already preheated to 300-750°C (preferably 550°C). The loading and discharging operations may be either periodical or continuous. $Al(OH)_3$ may be treated with flue gases at temperatures of 500-950°C (preferably 750°C); in the latter case the duration of the calcination is 5-10 sec. $Al(OH)_3$ is prepared from a solution of aluminates. For further activation, the calcinated product is maintained at 50-150°C, in an atmosphere of dimethyl-dichlorosilane vapor, until 0.1-1% of silane are absorbed. [Abstracter's note: Complete translation.]

Card 1/1

35714
H/005/62/000/003/001/002
D249/D301

15.9440

AUTHORS: Bartha, Zoltán, Karlinszky, László, and Ször, Péter

TITLE: Mechanism of the formation of porous rubber materials, III

PERIODICAL: Magyar kémiai folyóirat, no. 3, 1962, 94 - 101

TEXT: In Parts I and II formulas were deducted to describe the formation of porous rubber materials. This paper describes an experimental study of the validity of three of the six assumptions made in the mathematical discussions, i.e. (a) vulcanization occurs after the expansion of volume terminated; this sets the structure of the pores formed during the expansion without distortion, (b) the pressure and temperature is constant at each point of the mixture during vulcanization, (c) no gas escapes from the mixture during vulcanization. In order to fulfill the conditions of (a) the rates of expansion and vulcanization have to be coordinated. This was attained by varying the rate of expansion when the rate of vulcanization was constant and vice versa. The increase of volume and the

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Mechanism of the formation of ...

structure of pores were studied. Further, the rates of expansion and vulcanization were determined of mixtures containing different quantities of activators added to the $NaHCO_3$ expander material. The structure of pores formed confirms (a). Discrepancies were, however found due to the diffusion of gases during the expansion of volume. Due to the time taken by heating up of the mixture to the vulcanizing temperature, a vulcanized barrier layer can form on the surface hindering further expansion. Further experiments were made to clarify the effects of diffusion and temperature gradients in the mixture. Temperature and volume expansion measurements were carried out concluding: 1) During the formation of porous materials significant temperature gradients can occur, which are specially prominent in the surface layer of 0.5 - 0.7 cm thicknesses. These gradients have unfavorable effects on the pore structure and rate of expansion; 2) Part of the gases of the expander material escape from the mixture during the expansion. The quantity of these gases depends on conditions of the process; 3) Decrease of the temperature of the press or application of slow heating rates or the decrease of the layer thickness of the mixture, increase the amount of gases escap-

Card 2/4

Mechanism of the formation of ...

ing through diffusion; 4) The expansion set by the properties of the mixture and expander material can be attained only if there are no temperature gradients and the diffusion of gases is stopped. These two conditions cannot be fulfilled simultaneously since in the first case the rate of expansion has to be decreased and in the second case the same has to be increased; 5) As a consequence of the above, it can be expected that in the case of constant rate of vulcanization the expansion of volume as a function of the rate of expansion will have a maximum. The same applies vice versa for the function of the rate of vulcanization when the rate of expansion is constant. The rates of expansion and vulcanization corresponding to this maximum can only be determined experimentally. Experiments studying the conditions for maximum expansion of volume are described. Possibilities of extending the conclusions of the present paper are given for porous materials other than the ones based on rubber. Attention is drawn to the need for careful investigation of conditions in the fabrication processes of specific porous materials. There are 8 figures.

X

Card 3/4

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Mechanism of the formation of ...

ASSOCIATION: Gumiipari kutató intézet, Budapest (Research Institute of the Rubber Industry, Budapest)

SUBMITTED: July 10, 1961

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Card 4/4

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AUTHOR: Szőr, P.

TITLE: Viscoelastic behaviour of rubber-like high polymers. VI. Linear viscoelastic behaviour of rubber

SOURCE: Academia scientiarum Hungaricae, Acta chimica, v. 30, no. 2, Budapest, 1962, 245–253

TEXT: This is the continuation of the study of the deformation of rubber-like polymers under constant stress in time. The following two formulae had been previously established:

$$\gamma(t) = \mu \left[\frac{1}{G_0} + \int_{\tau_0}^{\tau_m} I(\tau)\, 1 \left(- e^{-\frac{t}{\tau}} \right) d\tau \right] \qquad (1)$$

$$\gamma(t) = \mu \left[\frac{1}{G_0} + Bt^k \right] \qquad (2)$$

where $1/G$ is the sum of deformations corresponding to the first peak of retardation spectra; K is the reciprocal value of the coefficient of the linear correlation $\log \eta - \log M$, established by Fox and Flory; the value of B depends on the lowest chain unit M_0.

Card 1/2

The validity of eq. (2) was experimentally tested at 25°C on natural rubber cylinders 1 cm in diameter and 1 cm high. Results confirmed the validity of the equation over a wide time range. The values of K agreed with those found by Fox and Flory. The expression $1/G_0$ could be considered as instantaneous elastic deformation, provided the time of applied stress is sufficiently long. There are 2 tables and 3 figures. The most important English-language reference reads as follows: T. G. Fox and P. J. Flory, J. American Chem. Soc. 70, 2384 (1948), and J. Phys. Colloid Chem. 55, 221 (1951).

ASSOCIATION: Research Institute for Rubber Industry, Budapest

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